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ABSTRACT

This paper presents an analysis of the correlation between the Hispanic Bilingual Gifted Screening Instrument (HBGSI), a recently developed inclusionary gifted identification measure, and the Naglieri Nonverbal Ability Test (NNAT) when administered to Hispanic elementary school children (grades K-4) in a large urban school district in Texas. The HBGSI is a 90-item checklist to be completed by teachers, developed in response to the underrepresentation of Hispanic students in gifted education programs. Subjects were 175 children from two schools, who were native Spanish-speakers with a wide range of English language skills. Data analyses are summarized here. Results indicate that the HBGSI is a promising tool for the initial, referral phase of the gifted identification process. Contains 39 references. (MSE)

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Assessment from Multiple Perspectives for Second Language Learners: An Analysis of the Hispanic Bilingual Gifted Screening Instrument

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Assessment from Multiple Perspectives for Second Language Learners: An Analysis of the Hispanic Bilingual Gifted Screening Instrument

Hispanic children in U.S. schools are the fastest growing ethnic group (U.S. Department of Education, 1995). By 2050, the number of Hispanic students will increase to more than 18 million, or 26.6% of the student population, making them the second largest ethnic group in the country (Day, 1993). When focusing of specific states, the percentages are magnified: for example, in Texas by the year 2030, Hispanics are projected to represent 45.9% of the its general state population (Center for Demographic and Socioeconomic Research and Education, 1996).

Although numbers of Hispanics are increasing, Hispanics, particularly those with limited English proficiency (LEP), are not currently and equitably represented in programs for gifted and talented (GT) by as much as 70% (LaFontaine, 1987; Ortìz & González, 1989; Cohen, 1990; Colangelo & Davis, 1991). Furthermore, in a six-state study Bermúdez and Rakow (1993) determined that among the respondents from highly Hispanic populated school districts, very few were identifying and/or serving gifted, LEP students, and of those districts that have developed identification procedures for this group of students, only 33% experienced success with the developed measures. This paper focuses on correlation analysis of an inclusionary gifted identification measure, The Hispanic Bilingual Gifted Screening Instrument (HBGSI) (Irby & Lara-Alecio, 1998), with the results of the Naglieri Nonverbal Ability Test (NNAT).

Reasons for Underrepresentation of Hispanic Bilingual Students in Gifted Programs

A number of reasons have been given for the underrepresentation of Hispanic LEP students in GT programs. These include the lack of valid tests or instruments (Melesky, 1985; Cohen, 1990; Irby & Lara-Alecio, 1996), the biased nature of standardized tests (González & Yawkey, 1993), the ambiguous definitions of giftedness (McKenzie, 1986), and teachers' lack of familiarity with LEP student characteristics (Bermúdez & Rakow, 1990). Furthermore, most procedures for identifying GT students have been developed for use with the native English speaking, middle class children (Cohen, 1988). Frequently because of their lack of English proficiency, LEP students are perceived as not being ready for gifted education (Harris, 1991); this frequently cited perception limits the definition for giftedness which is reflective of the values and perceptions of the majority culture (Harris & Weismantel, 1991).

Reasons given by researchers for the underrepresentation of minority students in GT programs include: 1) teachers' and appraisers' lack of knowledge and cultural sensitivity; 2) bias in the standardization process; and 3) identification of students based on a single test (Sawyer, 1993). Barkan and Bernal (1991) stated, "The historical problem of having too few children from nondominant ethnic groups in gifted programs derives precisely from decisions about what evidence of actual or potential giftedness one requires" (p. 144). For many years, no adequate identification measures have existed for students who are not middle class native English speakers (Bermúdez & Rakow, 1990) since screening and identification procedures often rely on norms which exclude minority learners (Marquez, Bermúdez, & Rakow, 1992).

Need for Better Assessment and Identification Measures and Procedures

In one study, 78% of the gifted education coordinators who answered a questionnaire acknowledged the need to use different means of assessment for LEP students, but only 32% believed their identification process was successful in identifying GT, LEP students (Bermúdez & Rakow, 1993). This demonstrates the need to find valid, reliable, and practical methods for screening language minority students into a pool for further study for possible placement into a gifted education program.

Instruments developed for the identification of GT, LEP students should take into account language, socioeconomic and cultural factors (Irby, Hernandez, Torres, & Gonzales, 1997), because the particular instrument used has been determined to make a difference in whether or not a student is identified as GT (Ortiz & Volloff, 1987).). The use of nontraditional and culturally sensitive methods of observation by teachers was recommended in screening procedures (Irby, et al., 1997). With regard to language, students should be assessed in their native language (Melesky, 1985; Cohen, 1988) or students should be assessed with instruments which do not use language at all. In fact, nonverbal testing procedures have been strongly recommended as fair evaluation instruments of culturally and linguistically different children (Bernal , 1974; Melesky, 1985; Tamaoke, Saklofske, & Ide , 1993; Clark, 1992).

Minority Population Representation in GT Programs

Why are minority students underrepresented in gifted and talented (GT) programs when "access to equitable programming is not a privilege; it is a right" (Smith, LeRose, & Clasen, 1991,

p.18)? Although "there is no logical reason to expect that the number of minority students in gifted programs would not be proportional to their representation in the general population" (Frasier, 1997, p.498), they are underrepresented by 30 to 70% in gifted and talented (GT) programs (Colangelo & Davis, 1991). According to Maxwell (1992), Hispanics comprised 16.2% of public school enrollment, but only 4.7% of the students enrolled in GT programs.

It has been demonstrated that, "Gifted students who are culturally different or who have limited proficiency in English, stand little chance of attaining the IQ score or achievement test score that is necessary to be placed in a gifted program" (Robisheaux & Banbury, 1994, p. 28). LEP students may be denied into GT programs due to their limited English vocabulary (Irby, Hernandez, Torres, & Gonzales, 1997), because they are perceived as not being ready for GT programs, or because of the opposition of staff members to special programs (Harris, 1991).

Identification of Minority GT Students

In the state of Texas, there are three principles established for the identification of GT students: 1) the district definition and identification process has to be in writing and approved by the local school board; 2) identification has to be based on at least five sources--including both objective and subjective measures; and 3) the identification process is ongoing and provisions for the transfer of students, for errors in identification, and for students exiting from the program are included in the written, board-approved procedures (Lashaway-Bokina, 1996).

When the identification of gifted minority students is sought, there are questions related

to ethnic and cultural issues to be considered: 1) Who are the gifted of these groups?; 2) Are they different from the gifted students of the majority culture?; 3) What influences the display of their giftedness and is this display different than that of the majority culture?; and 4) What are the advantages of multi-area identification for the various groups? (Baldwin, 1991).

In describing the problems affecting the identification of GT minority students, Frasier (1997) used four words beginning with the letter "a". Access referred to the low expectations of educators, low rates of referrals by parents, educators not recognizing gifted behaviors in minority students and the effects of cultural differences on teacher referrals. The second problem, assessment, has already been written about in previous paragraphs. Accommodation referred to program designs and curriculum that do not address the cultural and linguistic differences. Finally, attitudes about gifted potential in members of minority groups are that minority students do not fit the perceptions of giftedness.

"Many potentially gifted minority students are never considered for gifted programs due to a lack of referrals and ill-conceived teacher attitudes concerning minorities" (Lashaway-Bokina, 1996). Results of Bermúdez and Rakow's 1990 study showed that: 1) bilingual teachers were significantly more aware than teachers in regular classrooms of bias in standard instruments and informal procedures; 2) English as a Second Language (ESL) teachers were more aware than teachers in regular classrooms of the challenge LEP students face in speaking English as a second language; 3) teachers in the primary grades were more aware than high school teachers of the role first language plays on second language performance; and 4) bilingual teachers were more aware

than regular teachers of the inadequacies of current identification procedures and the value of a solid foundation in the first language to facilitate the transition to the second language.

Indicators of Giftedness

The definition of giftedness and how to identify gifted minority students has been debated and no one theory of gifted and talented behavior has been accepted by everyone. First of all, no one definition of giftedness fits all programs and circumstances (Davis & Rimm, 1985), even though definitions of giftedness have tended to reflect the values and perceptions of the majority culture (Harris & Weismantel, 1991) and central to most definitions of giftedness are intelligence, creativity, and talent (Lashaway-Bokina, 1996). "All gifted students possess cognitive, affective, and social characteristics that distinguish them from students who are not considered gifted" (Maker & Schiever, 1989, p. 3). Within and between linguistic and cultural groups, however, there are different sociocultural and peer expectations (Harris, 1991).

How giftedness is displayed may be unique to each ethnic group and unlike that of Anglo children (Baldwin, 1991). Therefore, it is best to describe giftedness within the context of a culture (Leung, 1981; Marquez, Bermúdez, & Rakow, 1992).

Identification procedures must consider linguistic and cultural behaviors that could mask giftedness, such as nonverbal cues that are different in different cultures (Bermúdez & Rakow, 1990). "Even though some bilingual children have a functional command of the English language, assessing them through a qualitative method encompassing cultural and linguistic factors gives them the opportunity to show their genuine cognitive abilities and potentials" (Gonzalez,

Bauerle, & Felix-Holt, 1994). In one study, 78% of the respondents acknowledged the need to use alternate means of assessment, such as self-reports, observations by members of the same cultural groups, parent and teacher observations, parental interviews, and checklists developed with community input (Bermúdez & Rakow, 1991). In the same study, 70% of the respondents reported using multiple sources in identifying GT LEP students, but only 32% found their processes successful. Unfortunately the majority of respondents indicated they had excluded community input in the identification process.

"Attempting to determine a [LEP] child's intellectual potential by using English-based assessment instruments can lead to erroneous conclusions.... assessment in English is more likely to reflect knowledge of English... than general intellectual potential" (Harris, 1993). Tamaoke, Saklofske, and Ide (1993) indicated that nonverbal tests can be used as fair evaluation instruments of culturally and linguistically different children. "Mexican American children performed significantly better on nonverbal than on verbal intelligence tests" (Clark, 1992, p. 222).

The use of nontraditional and culturally sensitive methods of observation will allow more students to be identified as gifted (Irby, et al., 1997). Borland and Wright (1994) suggested using observation, portfolio assessment and case study methods, especially with economically disadvantaged students. Whoever makes the assessment of Hispanic students should speak their native language and have an understanding of the cultural and linguistic differences (Ortiz & González, 1989). Informal and dynamic assessment procedures providing a holistic measure of a

student's performance in many different contexts should be used to identify GT, LEP students so that these students do not remain in ESL or bilingual classrooms without being served (Robisheaux & Banbury, 1994).

Effective solutions depend upon a change in our views about giftedness in minority groups, how we use these new views to develop procedures that better address giftedness in the diverse groups, using multiple assessment procedures that are culturally and linguistically appropriate, and preparing teachers to recognize the creative behaviors of minority students (Frasier, 1997). González, et al. (1994) believed that we need to incorporate cultural features in verbal and nonverbal cognitive development, rely more on nonverbal measures of intelligence rather than on verbal measures, and include people from the community of the child as informants in the nomination process. In addition to the recommendations already mentioned, others include providing information about students' strengths, providing situations where students can display skills other than verbal/logical, providing a checklist that includes characteristics shown to be traits for GT minority students, and observing the students in school and other settings (Harris & Weismantel, 1991).

Identifying GT students from linguistically and culturally diverse populations benefits individuals and society (Harris, 1993) as the leaders of tomorrow are in the schools of today (Davis & Rimm, 1985). "We cannot risk the loss of a mind as great as that of Einstein who like many minorities would not have been included in a program for the gifted" (Baldwin, 1991, p.423).

The Study

Purpose of the Study

The development of effective screening instruments is critical, because if the initial screening instruments of Hispanic, bilingual students are not inclusive of appropriate operational definitions or characteristics of giftedness, then students will continue to be denied access to programs due to their inability to move beyond the screening phase (Irby & Lara-Alecio, 1996). Screening instruments must be developed and should correlate to appropriate identification measures. Lashaway-Bokina (1996) suggested using nonverbal standardized measures to assess students' critical questioning, determination, and high-ability in content areas other than language arts in the identification process. Since nonverbal measures have been suggested, it was the purpose of this study to determine if the results obtained from the Hispanic Bilingual Gifted Screening Instrument (HBGSI) correlate with the results obtained from the Naglieri Nonverbal Ability Test (NNAT) among Hispanic bilingual elementary school children (grades Kindergarten-4) in a large urban school district in Southeast Texas.

Significance of the Study

Hispanic children are the fastest growing ethnic group in the nation's public schools (United States Department of Education, 1995). According to Oxford-Carpenter, et al. (1984) there will be a 35% increase in the Hispanic population in schools by the year 2000. In Texas, Hispanic students accounted for 33.1% of the student population at the time of Sawyer's study (1993). Predicted growth of the Hispanic population in Texas is 257.6% by 2030; at which time,

Hispanics are projected to represent 45.9% of the population in Texas (Center for Demographic and Socioeconomic Research and Education, 1996).

If gifted limited English proficient (LEP) students are not identified and served, they join the population of students at-risk of dropping out of school since they will not be challenged and enticed to stay in school (Bermúdez & Rakow, 1993). Harris and Weismantel (1991) wrote, "The need for students who possess gifts and talents to develop their potential and become productive members of their societies has been recognized worldwide" (p. 215). Sawyer (1993) made an extremely strong assertion regarding the need for identification of gifted students when she wrote, "Lack of identification, however, does not eliminate giftedness. Giftedness does not dissipate: it is often redirected through unacceptable social behaviors. Giftedness previously ignored through the educational system is gaining much attention through the creative behavior of gifted criminals" (p. 125). Therefore, tapping the linguistically and culturally diverse population for talent potential is beneficial to individuals and to society (Harris, 1993).

Research Questions

The current study sought to answer the following research questions: (1) To what extent do the results of the Hispanic Bilingual Gifted Screening Instrument (HBGSI) correlate with the results of the Naglieri Nonverbal Ability Test (NNAT) among Hispanic limited English proficient (LEP) elementary school students in a large urban district in Southeast Texas?, and (2) To what extent do the eleven cluster scores and the total score of the HBGSI account for variance in ability as measured by the NNAT among Hispanic limited English proficient (LEP) elementary

school students in a large urban district in Southeast Texas?.

Definition of Terms

"Bilingual," as used in this study, is a term identifying a person who functions in two languages. In the current study, Spanish was the dominant language at home and the students were acquiring English. Evident among the sample population was a range of bilingualism from unbalanced (almost monolingual Spanish) to balanced (equally functioning in Spanish and English).

When an indication is made on the Home Language Survey by the parent or guardian at the time of enrollment that a language other than English is spoken to and/or by the child the majority of the time at home, testing is done to determine if the student is LEP. LEP is a label used to identify students: 1) from homes where English is not the language spoken to and/or by the child the majority of the time and 2) who demonstrate little or no knowledge of English on a test of oral English skills (Multicultural Education, Training and Advocacy, Inc. [META], 1993).

Type of Design

A correlational design was used for this study to determine the degree of the relationship between the HBGSI and the NNAT. Additionally, this design allowed for multiple regression analysis with the prediction of subscale scores and the total score of the HBGSI to the ability score of the NNAT. Ten classes of Hispanic Bilingual students in Kindergarten through fourth grade participated in the study. The Naglieri Nonverbal Abilities Test (Harcourt Brace & Company, 1997) was administered to each student in a group setting and each student's

classroom teacher completed the Hispanic Bilingual Gifted Screening Instrument on each child during two consecutive months midyear during the school term. At this point students were between 14 and 18 weeks into the school year.

Sample

One hundred seventy-five Hispanic bilingual students participated in the study. They were selected from two elementary campuses in an urban school district in Texas. A purposeful stratified sample of two classrooms in five grade levels were selected for participation in the study. The school campuses were selected because each housed bilingual programs and had a at least a five year history with such programs. Human subjects approval was granted by the university and school district.

Sampling Procedure

Letters asking classroom teachers to participate in the study were given to two Kindergarten and two first-grade Bilingual teachers at one elementary school. At the neighboring school, letters were given to one Kindergarten, one second-grade, two third-grade, and two-fourth grade Bilingual teachers. All of the teachers agreed to participate in the study.

Letters, in Spanish, were sent home to the parents of each student in the selected classes asking the parents for permission to administer the NNAT to the student. One hundred seventy-five students were permitted to take the exam. In this group, there were 34 Kindergartners, 29 first-graders, 43 second-graders, 41 third-graders, and 28 fourth graders.

Instruments Used

The Hispanic Bilingual Gifted Screening Instrument (HBGSI) is a 78-item checklist designed to be completed by a student's classroom teacher. Each item is rated on a five-point Likert scale, with five being "always exhibits behavior/characteristic", 4 as "often exhibits behavior/characteristic", 3 as "sometimes exhibits behavior/characteristic", 2 as "seldom exhibits behavior/characteristic", and 1 as "never exhibits behavior/characteristic". The 78 items are divided into 11 clusters: motivation for learning, social and academic language, cultural sensitivity, familial, collaboration, imagery, achievement, creative performance, support, problem-solving, and locus of control. After rating each of the items, the scores are subtotaled by cluster, and then a total score on the HBGSI is determined. This instrument began with 90 items as a product of an extensive review of the literature on gifted Hispanics, Hispanic familial/sociological/linguistic characteristics, Hispanic elementary children, and diverse gifted populations, including minority, rural, and urban. Over 400 characteristics were found in the literature that related to one or more of the above listed classifications. As the 400 characteristics were qualitatively coded and categorized, they were reduced to 90 characteristics determined to be usable for the initial questionnaire. All items were constructed as positive characteristics, even though several of the characteristics found in the literature were negative ones. Thus, the 90 item questionnaire was constructed in a five-point Likert scale. These questionnaires were administered to bilingual teachers and results were analyzed using descriptive statistics and agglomerative hierarchical cluster analysis. Results showed 78 of the items grouped into eleven

clusters with alpha coefficients ranging between .62 to .91 using Cronbachis Alpha Coefficient formula (Irby & Lara-Alecio, 1996). Additionally, the HBGSI has been determined significantly effective at $p<.0001$ in discriminating between students whose teachers would refer to gifted education testing and those they would not (Irby, Hernandez, Torres, & Gonzales, 1997). All research has been conducted at grade levels K-4.

The NNAT (Harcourt Brace & Company, 1997) , an extension and revision of the Matrix Analogies Test is a nonverbal measure of ability developed to assess ability without requiring the student to read, write, or speak. It allows students to use reasoning and problem-solving skills to choose one of five answer choices to complete a figural matrix and can be administered in a group format. The NNAT is designed to be a fair assessment of students from any cultural, socioeconomic, or linguistic group. Therefore, it can be used to identify students in any population who may have academic problems or high reasoning and problem-solving abilities. However, the test included only 2.9% LEP students in the standardization program. Hispanics comprised 21.8% of the standardization population.

The NNAT was standardized in 1995 and 1996 with over 89,000 students from every geographic location, socioeconomic group, ethnic group, and urbanicity (urban, suburban, or rural) participating in the process, along with students who have handicapping conditions or who attend nonpublic schools. When the Kuder-Richardson Formula #20 was used on total scores, grade-based reliability coefficients ranged from 0.83 to 0.93 and age-based reliability coefficients ranged from 0.81 to 0.88. Kuder-Richardson Formula #21 grade-based reliability coefficients for

the clusters ranged from 0.16 to 0.89 with higher coefficients, in general, being present for clusters when there with fewer clusters in the level. The Standard Error of Measurement is 5.6, 5.7, or 5.8 for each level of the NNAT. Correlations between the NNAT and the Stanford Achievement Test are from 0.48 to 0.69 and correlations between the NNAT and the APRENDA2 are from 0.07 to 0.68. For adjacent levels of the NNAT, correlation coefficients range from 0.80 to 0.82.

The 38 items on the NNAT belong to one of four clusters: pattern completion, reasoning by analogy, serial reasoning, and spatial visualization. Pattern completion items, which appear more often at the elementary grade levels, require the child to look at a design within a large rectangle and determine which answer choice completes the pattern. Reasoning by analogy items challenge the student to recognize a logical relationship between several geometric shapes and to see how an object changes as it appears in the squares across the rows and down the columns of the design. Serial reasoning items contain a series of shapes that change across the rows and the columns throughout an item and make it necessary for the student to observe the sequence of shapes and how the sequence changes. Spatial visualization items, which are among the most complex items, demand that the student understands how two or more designs would look if combined.

There are seven levels of the NNAT: A for Kindergartners, B for first-graders, C for second-graders, D for third- and fourth-graders, E for fifth- and sixth-graders, F for seventh- through ninth-graders, and G for tenth- through twelfth-graders. Along with a total raw score (the

number of items answered correctly), a score can be obtained for each of the two to four clusters at the level of the NNAT the student completed. Raw scores are converted to scaled scores based on which level the student was given. Scaled scores can then be converted to a Nonverbal Ability Index (NAI) based on the student's age in years and months, percentiles and stanines based on the student's grade level, and an age equivalent score. The NAI can be converted to a percentile and stanine based on the student's age. Stanine scores of one, two, or three are considered below average; four, five, or six average; and seven, eight, or nine above average. Each student's performance for each cluster can also be marked as below average, average, or above average depending on the number of items in the cluster and the level of the NNAT the student took.

Data Collection Procedures

Between the twelfth and fourteenth week of the 1998 school term, ten teachers completed the HBGSI on 175 LEP students in their classrooms. The ratings of the items in each cluster were subtotaled and then a total score was obtained.

Additionally during this time, the NNAT was administered by a Spanish speaker to the groups of Hispanic bilingual students in each grade level who were participating in the study. After distributing one test booklet to each student and ensuring that each student had a pencil, the instructions were given in Spanish and two sample items were completed. Students were allowed 30 minutes to complete the actual 38 test items, during which time they could be given help marking or turning the pages if necessary.

After hand-scoring the test booklets, the researcher determined the raw score and the scores for each cluster. The raw scores were then converted to scaled scores, which were used to obtain the Nonverbal Ability Index (NAI) and the percentile and stanine by grade. Percentile and stanine by age was determined by using the NAI. Performance by cluster was decided based on the number of items in each cluster and the level of the NNAT the student completed. The NAI was the score used in the analysis of the data for this study. The NAI has a mean of 100 and a standard deviation of 15.

Statistical Analysis

The GB-STAT computer program was used to perform the statistical analysis. A Pearson r was obtained as the degree of correlation was calculated between the NAI scores on the NNAT and each of the cluster scores and total score of the HBGSI. A multiple regression analysis via forward stepwise regression was utilized to determine the correlation between the criterion variable, NNAT, and the predictor variables of 11 cluster scores and the total score of the HBGSI.

Findings and Discussion

The purpose of the this study was to determine the degree of the relationship between the scores on the HBGSI and NAI on the NNAT. Following is a report of those relationships by research question.

Research Question #1: To what extent do the results of the Hispanic Bilingual Gifted Screening Instrument (HBGSI) correlate with the results of the Naglieri Nonverbal Ability Test (NNAT)

among Hispanic limited English proficient (LEP) elementary school students in a large urban district in Southeast Texas?

A correlational matrix was run yielding Pearson r's for thirteen variables which were the eleven cluster scores and total score on the HBGSI and the NAI from the NNAT. Table 1 depicts the degree of correlation and significance level for each.

Insert Table 1 about here

Results indicate that the independent variables (eleven cluster scores and total scores) of the HBGSI were significantly correlated with the dependent variable (NAI). Eleven out of twelve independent variables were found to have positive correlations that ranked between .22 to .50 with $p \leq .01$. One independent variable (Support Cluster Score) was also found to correlate with the NAI with a moderate positive correlation of .18 with a $p \leq .05$. These results indicate that the construct of giftedness as measured by the HGBSI is significantly correlated with the ability indicator score, NAI, on the NNAT.

Research Question #2: To what extent do the eleven cluster scores and the total score of the HBGSI account for variance in ability as measured by the NNAT among Hispanic limited English proficient (LEP) elementary school students in a large urban district in Southeast Texas?

Table 2 lists the influence or predictor variables, 11 cluster scores and the total score on the HGBSI, as they relate to the explained variance of the criterion variable, NAI on the NNAT.

Insert Table 2 about here

Results indicate strong collinearity exists among three influence variables, Total Score, Cultural Sensitivity Cluster Score, and Support Cluster Score, when accounting for variance of the NAI and when using all twelve scores fromt the HBGSI as predictor variables. These three scores as indicated in Table 2 are significant predictors with p values ranging from $p \leq .0001$ to $p \leq .0322$. When other scores were added to the equation, they did not yield significant contributions to the multiple regression analysis, although as shown in Table 1 these same scores were significantly correlated to the criterion variable. The best predictor of variance of the NAI was the HBGSI Total Score.

Discussion

Generally, in a gifted educaton program one finds three phases in the identification process: (1) nomination or referral, (2) assessment, and (3) recommendation for placement. Based on the results of this study, the HBGSI may be used in Phase 1 of the identification process as a referral instrument which would move the student to Phase 2, assessment. It is the intent of the HBGSI to provide bilingual teachers with a structure to make better referrals for assessment. It is important that bilingual teachers conducting this initial assessment of the potentially gifted child understand the characteristics for each cluster as well as how to apply the score which measures the extent to which students possess those characteristics. The items should be based on direct observation of behavior because the results will be far more valuable

than if they were based on inference.

The HBGSI provides promise as a referral instrument in the process of acquiring more equitable services to the Hispanic bilingual gifted student. This instrument as a product of extensive research presents attributes that are relevant to Hispanic bilingual students and accounts for factors that are not used on traditional tests. The HBGSI is the result of an extensive review of literature, the contribution of hundreds of bilingual teachers working with many gifted Hispanic children, empirical studies, and the non-compromising situation of the researchers to keep the studies and the instrument grounded within the referntial cultural milieu of the child.

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Table 1.

Correlation between Influence Variables of the HBGSI and the Criterion Variable, NAI of the NNAT

Influence Variables	NAI
Cluster and Total Scores, HBGSI	*r*
Social and Academic Language Cluster	**.30
Cultural Sensitivity Cluster	**.22
Familial Cluster	**.42
Motivation Cluster	**.41
Collaboration Cluster	**.43
Imagery Cluster	**.39
Achievement Cluster	**.49
Support Cluster	*.18
Creative Performance Cluster	**.28
Problem Solving Cluster	**.45
Locus of Control Cluster	**.47
Total Score	**.50

*$p \leq .05$, **$p \leq .01$

Table 2.

Stepwise Multiple Regression of Influence Variables of the HBGSI on the Criterion Variable of NAI of the NNAT

Influence Variables Cluster Scores and Total Score, HBGSI	*Beta*	*r*	*R*	R^2
Total Score	.13	.50	***.50	.25
Cultural Sensitivity Cluster	-1.38	.22	**.54	.30
Support Cluster	- .46	.18	*.56	.31
Creative Performance Cluster	- .41	.28	.58	.33
Locus of Control Cluster	.19	.47	.58	.33
Familial Cluster	.15	.42	.58	.33
Achievement Cluster	.16	.49	.58	.34
Collaboration Cluster	- .06	.45	.58	.34
Social and Academic Language	- .12	.30	.58	.34
Imagery Cluster	- .11	.39	.58	.34
Problem Solving Cluster	- .03	.45	.58	.34
Motivation Cluster	- .06	.41	.58	.34

*$p \leq .05$, **$p \leq .01$, ***$p \leq .0001$